

REMARKS

The application has been thoroughly reviewed in light of the May 19, 2004, Office Action. Claims 1-4, 6-13, 15-24, 26, 29-38, 41, 47, 50 and 53-55 are now pending, with claims 1, 22, 37, 41, 47, 50 and 53-55 being independent. Claims 5, 14, 25, 27, 28, 39, 40, 42, 43, 45, 46, 48, 49, 51 and 52 have been canceled without prejudice and/or disclaimer of subject matter. Claims 1, 4, 7, 12, 13, 22, 24, 25, 29, 35-37, 41, 44, 47, 50 and 53-55 have been amended. Each of the issues raised in the outstanding Office Action are addressed below.

Phone Interview

Applicant wishes to thank the Examiner, Bradley King (for which the present application has now been assigned since Benjamin Pezzlo has left the Patent and Trademark Office), for the courtesies extended to Applicant's representative during a phone interview conducted on June 30, 2004. During the phone conversation, the parties discussed the present invention and the prior art. No agreement was reached.

Claim Objections

Claims 7 and 37 were objected to for the informalities noted on page 2 of the Action. Applicants have amended these claims to address the informalities and respectfully submit that these claims, as well as all the claims now pending, fully conform to the requirements of 35 U.S.C. §112, first paragraph. Accordingly, withdrawal of the claims objections is now respectfully requested.

Prior Art Rejections

Claims 1, 3-22 and 24-36 were rejected under 35 U.S.C. §102 as being anticipated by U.S. patent no. 3,809, 192 (Stehle), and claims 2, 23, 50-52 and 55 were rejected under 35 U.S.C. §103 as being obvious in view of Stehle.

In addition, claims 37-49, 53 and 54 were rejected as being anticipated under §102 over U.S. patent no. 6,467,590 (Aydt). For the following reasons, Applicant respectfully submits that claimed invention is patentable over the prior art.

Amended independent claim 1 is directed to a brake rotor which includes first and second annular braking surfaces which jointly define inner and outer circumferential surfaces and a central portion. Also included with the brake rotor are a first surface slot, provided on the first annular braking surface which includes a length and a width, and a first opening having a size smaller than the length of the first surface slot. All or a portion of the first opening being provided within the first slot. The remainder of the independent claims all recite the same patent feature, as well as other patentable features.

As understood by Applicant, Stehle is directed to a brake disk having a plurality of recesses which penetrate inwardly from the braking surfaces. The recesses are arranged in a uniform pattern over the braking surfaces along dividing lines interconnecting the centers of the recesses (see, for example, Figs. 6-10).

The claimed invention is an improvement over prior art disc brake rotors. Specifically, prior art rotors have included both slots and openings (e.g., cross-drilled recesses). Slots have been included on braking surfaces to allow for the collection of gases produced during braking, as well as a cleaning mechanism for cleaning brake pad surfaces. Cross-drilling the rotor in one sense increases airflow to cool the rotor, and acts like a vent to eliminate the gases produced during braking. However, although cross-drilling increases airflow to cool the rotor, it decreases braking surface area – thus, any gain in performance of the rotor in keeping it cool are generally offset by the decrease in braking surface area.

Accordingly, Applicant has discovered a novel an ingenious way to both increase airflow to the rotor, maximize braking surface area and provide collection and venting of braking gases and debris, by combining the two features into a single element. Applicant respectfully submits that neither cited reference, nor any of the prior art of record or commercially available rotors, have combined the two elements into a single feature.

Specifically, after a thorough and careful review of Stehle and Aydt, as well as the prior art of record, Applicant could find nothing in any of the references, either alone or in any combination, which either discloses or teaches/suggests a brake rotor (or a brake rotor slot), having a surface slot, provided on a rotor braking surface, and an opening having a size smaller than a length of the surface slot.

Applicant also respectfully submits that the slot of Fig. 15 or Fig. 16 of Aydt does not disclose, teach or suggest the claimed invention. During the telephone interview, the Examiner brought up these figures with regard to the claimed invention. In response, Applicant now respectfully submits, that at the very least, these two figures fail to disclose, teach or suggest a *surface* slot. The slots 10 in these figures penetrates through the respective side of the brake rotor into the cooling duct 20. This is also evident since the tops of the ribs 7 are exposed when viewing the slot from above.

For at least those reasons, the independent claims are patentable over the prior art. Since the remainder of the pending claims all depend from one or another of the independent claims, they are patentable for the same reasons. Accordingly, withdrawal of the prior art rejections are respectfully requested.

CONCLUSION


In view of the foregoing amendments and remarks, Applicant submits that the issues raised in the outstanding Action has all been addressed. Accordingly, Applicant respectfully requests favorable consideration of the pending claims and early passage to issue of the present application.

No fee is currently due for the present response. However, in the event that it is determined that additional fees are due, the Commissioner is hereby authorized to charge the undersigned's Deposit Account No. 50-0311. Ref. No. 26571-501.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 935-3000. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

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